

Prepared Statement of
Kurt Malchow
Climate Adaptation Coordinator
California Natural Resources Agency

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Informational Hearing on Climate Change
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Madame Chair and Members of the Committee - it's an honor to be here today to speak to you about the climate adaptation efforts underway in the State. My name is Kurt Malchow and I am the Adaptation Coordinator for the California Natural Resources Agency.

Today, I'd like to cover three items:

1. Provide an overview of climate impacts to the State
2. Describe the California Adaptation Strategy
3. Provide an update on adaptation funding from federal climate bills

1) Climate Impacts:

The state's 2009 Climate Change Impacts Assessment, the same scientific basis from which the AB 32 Scoping Plan was drawn from, provides also the scientific basis from which climate impacts were synthesized for this adaptation strategy.

Climate change risks fall into three general categories: Sea level rise, precipitation, and temperature increase.

SLR: Sea levels have risen by as much as seven inches along the California coast over the last century, increasing erosion and pressure on the state's infrastructure, water supplies, and natural resources. Scientific findings produce estimates of as low as 12 and up to 55 inches by the end of the century.

T: By 2050, temperatures are projected to increase by an additional 1.8 to 5.4 °F. By 2100, the models project temperature increases between 3.6 to up to 9 °F if emissions remain the same.

Precipitation: precipitation models suggest a small to significant (12-35 percent) overall *decrease* in precipitation levels by mid-century. In addition, higher

temperatures increase evaporation and make for a generally drier climate, as higher temperatures accelerate snowmelt and increase evaporation. The research concludes that more precipitation will fall as rain rather than as snow, with serious implications for water management in the state.

What I wish to convey is how these changes could seriously affect the systems on which the state's economic, social and natural systems depend.

For example, temperature increases could cause the loss of up to 80% of the Sierra snowpack by the end of the century, which attenuates precipitation for water use during the drier seasons. We have a water distribution infrastructure that depends on this snowpack to supply much of the State's \$37 billion agriculture industry, and 2/3 of its population.

According to a Next 10/UC Berkeley report, \$2.5 out of \$4 trillion dollars of the state's real estate assets is at risk from SLR, extreme weather, and wildfires.

We must keep in mind climate impacts are already occurring, and are projected to be worse, even if we eliminated emissions today.

In response, Governor Schwarzenegger issued an Executive Order last November that provided direction in developing California's first statewide climate adaptation effort.

2) The California Adaptation Strategy:

California Natural Resources Agency, through the Climate Action Team, was named to lead the effort and coordinate with state agencies as well as local, regional, federal, public and private entities through a stakeholder process to develop a state Climate Adaptation Strategy.

The strategy summarizes the best known science on climate change impacts to California, assesses California's vulnerability to the identified impacts and then outlines strategies that can be implemented within and across state agencies to promote resiliency to climate impacts.

These strategies are organized into near term and long term, with participating agencies already committed to completing the near-term strategies. Long term strategies may change as further research becomes available. It is important to see adaptation and mitigation efforts as co-equal and integrated. Adaptation and mitigation measures often overlap, but there may be unintended negative consequences without coordinated efforts with each other. Examples include:

- Water conservation (favorable for both)
- Re-forestation efforts without considering the tree species interactions with the surrounding habitat (favorable to mitigation, not to adaptation)

- Meeting peak energy demand with fossil fuels (could work for adaptation, not mitigation)
- Other measures like development within floodplains would be unfavorable for both.

Status of the Strategy: Released December 2, 2009, along with:

- A Climate Adaptation Advisory Panel appointed to assess the greatest risks to California from climate change and recommend strategies to reduce those risks, building on the Climate Adaptation Strategy.
- A Google Earth Adaptation Tool prototype was released that will soon provide geospecific climate impact information
- We are currently developing state vulnerability assessments

Key Recommendations:

1. Establish Climate Adaptation Advisory Panel (done)
2. Adapt water mgmt. and use for climate change (Directed under SB X-71, increase WUE, expand storage, improve conditions in the Delta.)
3. State agencies should avoid significant new development in high risk areas (SLR, storms, erosion along the coast)
4. State agencies will develop adaptation plans (In progress as part of this effort)
5. Follow the California Env. Quality Act (CNRA added guidance language to consider impacts of locating projects in areas susceptible to hazards from climate change)
6. Develop climate hazard mitigation plans including identifying the most vulnerable communities
7. ID most vulnerable habitats
8. Provide guidance to local communities on assessing ways to maintain/improve public health under climate change
9. Offer guidance/tools for local adaptation planning
10. Identify wildfire areas most vulnerable
11. Increase renewable energy supply/efficiency (Desert Renewable Energy Conservation Plan)
12. Make research and monitoring more accessible (– to synthesize impacts into useful information to communities)

The focused is on Science, Impacts, Strategy, and near-term Action

3) My final topic is funding for climate adaptation:

Development of the Strategy and progress with near-term activities so far have been completed with existing resources. As we continue our efforts we are looking into additional funding sources.

- We are seeking federal grants for additional vulnerability studies. This is an important step, as we need to strengthen the connection between identified climate impacts and the policies needed to address them.

There are two bills in congress with language allocating funds for climate adaptation. The funding would be secured through specified percentages of available emissions allowances each year, then designating the revenue for particular adaptation programs:

- The first is HR 2454 (Last passed the House in June of this year) Clean Energy and Security Act of 2009 (Waxman-Markey): For funds distributed to the states under this bill, 84.4% currently goes to state wildlife agencies, and 15.6% to state coastal agencies
- The second is Senate Bill 1733 (Clean Energy Jobs and American Power Act) Kerry-Boxer: This bill establishes a fixed relationship between state funding and federal agency funding: 38.5% will go to state agencies, and the remainder of the funds will be divided among federal agencies.

In sum, support for Adaptation under these bills starts small, and ramps up over time.

Thank you Madame Chair and members of the Committee for the opportunity today to offer testimony about the State's climate adaptation efforts, and we are pleased to serve as a resource to the Committee for future planning.